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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER NICKERSON, JEFFREY L	
			ART UNIT 2109	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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88

**Office Action Summary**

Application No.

10/500,146

Applicant(s)

KATAYAMA, YASUSHI

Examiner

Jeffrey Nickerson

Art Unit

2109

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 July 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-22, 24-28 is/are rejected.
- 7) ☒ Claim(s) 10 and 23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 July 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>09 July 2004</u>  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

1. This communication is in response to Application No. 10/500,146 filed on 09 July 2004. Claims 1-28 have been examined.

### ***Information Disclosure Statement***

2. The listing of references in the Search Report is not considered to be an information disclosure statement (IDS) complying with 37 CFR 1.98. 37 CFR 1.98(a)(2) requires a legible copy of: (1) each foreign patent; (2) each publication or that portion which caused it to be listed; (3) for each cited pending U.S. application, the application specification including claims, and any drawing of the application, or that portion of the application which caused it to be listed including any claims directed to that portion, unless the cited pending U.S. application is stored in the Image File Wrapper (IFW) system; and (4) all other information, or that portion which caused it to be listed. In addition, each IDS must include a list of all patents, publications, applications, or other information submitted for consideration by the Office (see 37 CFR 1.98(a)(1) and (b)), and MPEP § 609.04(a), subsection I. states, "the list ... must be submitted on a separate paper." Therefore, the references cited in the Search Report have not been considered. Applicant is advised that the date of submission of any item of information or any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the

Art Unit: 2109

IDS, including all "statement" requirements of 37 CFR 1.97(e). See MPEP § 609.05(a).

3. The information disclosure statement filed on 09 July 2004 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

### ***Drawings***

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 40 (pg 36, line 1), 714 (pg 84, line 5). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to remove the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the

Art Unit: 2109

changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: S714 (Figure 31), S715 (Figure 31), and S552 (Figure 29).

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

6. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Controlling data transmission on a data storage network by selecting from multiple transmission modes.

7. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc. The phrase "are provided" in line 1 of the abstract should be removed.

8. The disclosure is objected to because of the following informalities: an incorporated reference depends on a hyperlink. Reference is made to a paper titled "RIZZ097," which is defined by a hyperlink (pg 34, line 21 and pg 44, line 9). This should be changed to reflect an actual publication if one exists, as file locations and websites can quickly change causing hyperlinks to be no longer valid. The hyperlink provided no longer directs to a valid webpage.

Appropriate correction is required.

9. The disclosure is objected to because of the following informalities: literal translation of the disclosure. The majority of the disclosure appears to be a literal translation from Japanese to English. A disclosure should be clear, concise, and in idiomatic English. The disclosure is not unclear so as to void an initial search

Art Unit: 2109

of the prior art, however, revision of the disclosure is requested. There are a plethora of grammatical errors throughout the entire disclosure. For instance, the word "that" needs to be inserted in the middle of the phrase "node received" in the following locations of the disclosure: pg 24, lines 9, 24, 17, 26; pg 25, lines 4, 9, 13. Numerous other grammatical errors exist throughout the disclosure. The "Background of the Invention" section of the disclosure is particularly difficult to interpret and understand, especially the definitions of transmission modes that are critical to understanding the subject matter of the invention.

Either a thorough revision of the disclosure or a substitute specification is required.

10. The disclosure is objected to because of the following informalities: inconsistent description between the specification and the drawings. Figure 14 clearly depicts deinterleaving and FEC decoding of the data blocks. However, the disclosure (pg 24, lines 26-29) states that Figure 14 is representing interleaving and FEC encoding. Also, the disclosure (pg 59, lines 22-25) clearly states that item 315 in Figure 20 is deinterleaving and FEC decoding. However, Figure 20, item 315 is depicted as an FEC encoder and interleaver.

Appropriate revision of the drawings or specification is required.

***Claim Objections***

11. The examiner recognizes the applicant's ability to be his own lexicographer and due to the extreme nature of terminology used in the claim language throughout the majority of the claims, confusing noun structures consisting of a noun and its preceding adjectives will be considered as a single entity that is identifiable and distinct. That is, "reproduction request process object data" will be treated as being separate to "reproduction object data."

12. Claims 7, 8, 9, 10, 20, 21, 22 and 23 are objected to because of the following informalities: improper grammar creating confusion of claim limitations. Each of the above claims contain the phrase "node received", which should be changed to "node that received." Appropriate correction is required.

13. Claims 10 and 22 are objected to because of the following informalities: confusing structure of the second limitation of the claim. The applicant starts a clause "... that the relation, between the number of return blocks:  $q \times a \times n \times B$  ..." which must end with "and ... ", however there are several possible exit points to the clause which may cause a further limitation to be construed. For purposes of further examination the examiner will consider the clause to be: "between the number of return blocks ... and the number of blocks:  $p$ ." Appropriate correction is required.



***Claim Rejections - 35 USC § 112***

14. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

15. The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

Appropriate revision where applicable is required.

16. Claims 1, 4, 6, 7, 10, 14, 15, 17, 19, 20, 23, and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1, 4, 6, 7, 10, 14, 15, 17, 19, 20, 23, and 27, the applicant uses the phrases "reproduction object data" and "reproduction request process object data". There is no explicit definition in the specification and no indication as to what the difference between the phrases should be. For purposes of further examination the examiner will assume the phrases' most broad interpretation.

17. Claims 4, 6, 12, 19, 25 recite the limitation "the demand level" in claim 4, line 4. There is insufficient antecedent basis for this limitation in the claim. For purposes of further examination this will be considered as "a demand level."

18. Claims 4, 6, 7, 10, 17, 19, 20, 23 recite the limitation "the reproduction object data" in claim 4, line 5. There is insufficient antecedent basis for this limitation in the claim. For purposes of further examination this will be considered as "a reproduction object data."

19. Claims 5, 18 recite the limitation "the value" in claim 5, line 5. There is insufficient antecedent basis for this limitation in the claim. For purposes of further examination this will be considered as "a value."

20. Claims 6, 19 recite the limitation "the carousel transmission mode" in claim 6, line 4. There is insufficient antecedent basis for this limitation in the claim. For purposes of further examination this will be considered as "a carousel transmission mode."

21. Claims 7, 8, 9, 10, 20, 21, 22, 23 recite the limitation "the data reproduction process request" in claim 7, line 8. There is insufficient antecedent basis for this limitation in the claim. For purposes of further examination this will be considered as "the data reproduction process request packet."

22. Claims 8, 21 recite the limitation "the process request" in claim 8, line 6. There is insufficient antecedent basis for this limitation in the claim. For purposes of further examination this will be considered as "a process request."

23. Claims 8, 21 recite the limitation "the reproduction process object data" in claim 8, line 10. There is insufficient antecedent basis for this limitation in the claim. For purposes of further examination this will be considered as "the reproduction request process object data."

24. Claims 10, 23 recite the limitation "the number of return blocks:  $q \times \alpha \times n \times \beta$ " in claim 10, line 10. There is insufficient antecedent basis for this limitation in the claim. For purposes of further examination this will be considered as "a number of return blocks:  $q \times \alpha \times n \times \beta$ ".

25. Claims 10, 23 recite the limitation "the record probability:  $\alpha$ " in claim 10, line 11. There is insufficient antecedent basis for this limitation in the claim. For purposes of further examination this will be considered as "a record probability:  $\alpha$ ".

26. Claims 10, 23 recite the limitation "the number of network-connected nodes:  $n$ " in claim 10, line 13. There is insufficient antecedent basis for this limitation in the claim. For purposes of further examination this will be considered as "a number of network-connected nodes:  $n$ ".

Art Unit: 2109

27. Claims 11, 24, 28 recite the limitation "the number of demand level information acquisition requests" in claim 11, line 7. There is insufficient antecedent basis for this limitation in the claim. For purposes of further examination this will be considered as "a number of demand level information acquisition requests."

28. Claims 12, 25 recites the limitation "the threshold level" in claim 12, line 5. There is insufficient antecedent basis for this limitation in the claim. For purposes of further examination this will be considered as "a threshold level."

29. Claim 22 recites the limitation "the rule judgment condition setting" in claim 22, line 3. There is insufficient antecedent basis for this limitation in the claim. For purposes of further examination this will be considered as "the rule judgment condition setting step."

***Claim Rejections - 35 USC § 101***

30. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 27 and 28 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claims 27 and 28, computer-related inventions whether descriptive or functionally descriptive material are non-statutory categories when claimed as descriptive material *per se* (see *Warmerdam*, 33 F.3d at 1360 USPQ2d at 1759), falling under the “process” category (i.e. inventions that consist of a series of steps or acts to be performed). See 35 U.S.C. 100(b) (“The term process means, art, or method, and includes a new or a known process, machine, manufacture, composition of matter or material”). Functional descriptive material: “data structures” representing descriptive material *per se* or computer program representing computer listing *per se* (i.e. software *per se*) when embodied in a computer-readable media are still not statutory because they are not capable of causing functional change in the computer. However, a claimed computer-readable *storage* medium encoded with a data structure, computer listing or computer program, having defined structural and functional interrelationships between the data structure, computer listing or computer program and the computer software and hardware component, which permit the data structure’s, listing or program’s functionality to be realized, is statutory (see MPEP §2106).

### ***Claim Rejections - 35 USC § 102***

31. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2109

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

32. Claims 11-13, 24-26, and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Day (US 7,222,185 B1).

Regarding claim 11, Day teaches an information processing apparatus that

serves as a demand information provider apparatus (Day: Figure 3, item 32 in combination with item 82) for providing demand level information of transmission data (results) over a network (Day: Figure 3, item 36; Day: col 8) characterized by comprising:

a communication unit (Day: system controller) for data transmission and reception to and from a network-connected node (Day: Figure 3, item 34: receiver) (Day: col 8, lines 4-11)

a control unit (Day: system controller in combination with counting facility) for counting the number of demand level information acquisition requests received from the network-connected node via the communication unit (Day: col 8, 18-27 specify tracking requests and then counting them)

and generating demand level information for each data (Day: results) in accordance with the count information (Day: col 8, lines 22 – 33 specify tracking and creating results from the number of requests)

Art Unit: 2109

generating response information (Day: reports) corresponding to the demand level information acquisition request in accordance with the generated demand level information (Day: results) (Day: col 8, lines 22 – 36 specify reporting the results)

and transmitting the response information via the communication unit.  
(Day: col 8, lines 33 – 36 specify reporting the results back to the system controller)

Regarding claim 12, Day teaches an information processing apparatus characterized in that:

the control unit (Day: system controller in combination with counting facility) is configured to execute transmission control of a carousel transmission (Day: multicast) process request for data corresponding to the demand level equal to or larger than the threshold value, relative to a carousel transmission execution node if the demand level for each data based upon the count information becomes equal to or larger than a preset threshold value. (Day: col 8, lines 37-61 specify choosing unicast if below a threshold for unpopular content; Day: abstract specifies choosing multicast if the popularity is higher)

Regarding claim 13, Day teaches an information processing apparatus characterized in that:

the control unit (Day: system controller in combination with counting facility) is configured to execute a process of storing an identifier (Day: name) of

Art Unit: 2109

carousel transmission execution object data (content) and carousel transmission destination address information in accordance with transmission source node address information (Day: source information) of the received demand level information acquisition request, in the carousel transmission process request. (Day: col 10, lines 53-62 specify content information stored in an allocation table; Day: col 9, lines 7-15 for allocation table description)

Regarding claim 24, this method claim comprises limitations substantially similar to that of claim 11 and the same rationale of rejection is used, where applicable.

Regarding claim 25, this method claim comprises limitations substantially similar to that of claim 12 and the same rationale of rejection is used, where applicable.

Regarding claim 26, this method claim comprises limitations substantially similar to that of claim 13 and the same rationale of rejection is used, where applicable.

Regarding claim 28, this program claim comprises limitations substantially similar to that of claim 11 and the same rationale of rejection is used, where applicable.

### ***Claim Rejections - 35 USC § 103***

33. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:



(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

34. Claims 1, 3, 8, 14, 16, 21, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fradette (US 6,606,698 B2), and further in view of Kaneko et al (US 2003/0,101,272 A1).

Regarding claim 1, Fradette teaches an information processing apparatus that serves as a reproduction instruction apparatus for transmitting a data reproduction process request (translated request) (Fradette: col 2, lines 6-11 specify manipulating the request) to a node (jukeboxes) connected to a network (Fradette: Figure 13, item 20d specify it could connect to a network; col 1, lines 52-55 specify jukeboxes on a network)

and executing a data reproduction process based on return data (Fradette: col 9, lines 52-59 specify updating the cache) comprising:

a packet generating unit (normalizer) for performing a setting process for reproduction request process object data (translated request) and an address setting process (storage address generator), and generating a data reproduction process request packet (normalized request) storing designation data for the set request process object data (translated request) as a request statement; (Fradette: col 2, lines 11-14)

Art Unit: 2109

a network interface unit (access unit) for transmitting the packet generated by the packet generating unit. (Fradette: col 2, lines 16-17 and col 5, lines 46-48 specify the access unit is a communication interface)

Fradette does not teach selecting a transmission mode or determining the transmission rate.

Kaneko, in a similar field of endeavor, teaches a data transmission rate setting unit (Kaneko: Figure 1, item 11: data management unit) for selecting one or more data transmission modes (Kaneko: transfer method) to be adopted as a return data transmission mode from a plurality of data transmission modes and determining a data transmission rate (Kaneko: band in use/transfer rate) of each selected data transmission mode (Kaneko: [0005] specify a "distribution information" that contains the selected transfer method from either unicast or multicast and the transfer rate; Kaneko: [0012-0013] specify the band in use can be adjusted based on the method, implying it can be determined).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Kaneko for managing data transfer by selecting a transmission mode and rate. The teachings of Kaneko, when implemented in the Fradette system, would allow for more efficient and faster data transfer capabilities. One of ordinary skill in the art would be motivated to utilize the teachings of Kaneko in the Fradette system in order to "efficiently adjust the distribution schedule of a plurality of pieces of data in a distribution system" (Kaneko: [0011]).

Regarding claim 3, the Fradette/Kaneko system teaches an information processing apparatus characterized in that:

the data transmission rate setting unit is configured to select the data transmission mode including at least either a carousel transmission mode (Kaneko: multicast method), a chaining transmission mode, a distributed cache mode or a client server mode (Kaneko: unicast method) and determine the data transmission rate (Kaneko: band in use) of each selected mode. (Kaneko: [0005] and [0012-0013])

Regarding claim 8, the Fradette/Kaneko system teaches an information processing apparatus characterized in that:

a rule judgment condition setting unit (Fradette: caching unit) for setting judgment data (Fradette: I/O status) capable of being adopted by a process of judging whether a node received the data reproduction process request executes a process satisfying the process request; (Fradette: col 9, lines 52-62 specify an I/O status being returned by the cache)

wherein the packet generating unit (Fradette: normalizer) is configured to generate the data reproduction process request packet storing the judgment data set by the rule judgment condition setting unit and the designation data for the reproduction process object data. (Fradette: requested data) (Fradette: col 9, line 60 – col 10, line 3 specify the requested data and I/O status are both sent back to the host)

Regarding claim 14, this method claim comprises limitations substantially similar to that of claim 1 and the same rationale of rejection is used, where applicable.

Regarding claim 16, this method claim comprises limitations substantially similar to that of claim 3 and the same rationale of rejection is used, where applicable.

Regarding claim 21, this method claim comprises limitations substantially similar to that of claim 8 and the same rationale of rejection is used, where applicable.

Regarding claim 27, this program claim comprises limitations substantially similar to that of claim 1 and the same rationale of rejection is used, where applicable.

35. Claims 2, 4, 6, 15, 17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fradette (US 6,606,698 B2) and Kaneko et al (US 2003/0,101,272 A1), and in further view of Day (US 7,222,185 B1).

Regarding claim 2, the Fradette/Kaneko system teaches an information processing apparatus characterized in that the data transmission rate setting unit selects a data transmission mode and determines the transmission rate of each selected data transmission mode. (Kaneko: [0005])

The Fradette/Kaneko system does not teach selecting a transmission mode based on a demand level of the reproduction object data.

Day, in a similar field of endeavor, teaches setting the data transmission mode in accordance with a demand level (Day: popularity) of reproduction object data (Day: content) (Day: abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Day for selecting a transmission mode based on the demand of the content. The teachings of Day, when implemented in the Fradette/Kaneko system, would allow for a more efficient content distribution and retrieval system. One of ordinary skill in the art would be motivated to utilize the teachings of Day in the Fradette/Kaneko system in order to "maximize network resources, thereby causing the network to operate economically" (Day: abstract).

Regarding claim 4, Fradette, Kaneko, and Day together teach an information processing apparatus characterized in that:

the data transmission rate setting unit (Day: system controller) is configured to have correspondence data (Day: content distribution characteristic) between the demand level (Day: popularity) of the reproduction object data (Day: content) (Day: abstract;) and a band rate as the data transmission rate of an adopted data transmission mode; (Day: col 7, lines 7-11 imply that the content distribution characteristic could be based on factors other than just popularity; Kaneko: [0005] specify a transfer rate corresponding with selected modes)

Art Unit: 2109

select the data transmission mode based upon demand level information of the reproduction object data in accordance with the correspondence data

(Day: col 2, lines 58-62)

and execute a process of determining the data transmission rate (Kaneko: band in use) of each selected mode (Kaneko: [0012-0013] specify adjusting, which imply determining)

Regarding claim 6, Fradette, Kaneko, and Day together teach an information processing apparatus characterized in that:

the data transmission rate setting unit (Day: system controller) is configured to execute a process of setting the carousel transmission mode (Day: multicast/one-to-many) as the adopted data transmission mode, (Day: abstract) if the demand level (Day: content distribution characteristic) of the reproduction object data (Day: content) is higher than a preset threshold value. (Day: col 3, lines 42-52 specify comparing the popularity level to a threshold; the abstract specifies a higher popularity results in a multicast mode implying it has to be above the threshold).

Regarding claim 15, this method claim comprises limitations substantially similar to that of claim 2 and the same rationale of rejection is used, where applicable.

Regarding claim 17, this method claim comprises limitations substantially similar to that of claim 4 and the same rationale of rejection is used, where applicable.

Regarding claim 19, this method claim comprises limitations substantially similar to that of claim 6 and the same rationale of rejection is used, where applicable.

36. Claims 7 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fradette (US 6,606,698 B2), in view of Kaneko et al (US 2003/0,101,272 A1) and Day (US 7,222,185 B1), and in further view of Noma et al (US 2003/0,055,988 A1).

Regarding claim 7, Fradette, Kaneko and Day together teach an information processing apparatus further comprising:

a data recovery processing unit (Fradette: normalizer) that can compress, decompress, encrypt, and decrypt data and combining data requests. (Fradette: col 4, line 66 – col 5, line 15)

wherein the data recovery processing unit is configured to execute the processes for the reproduction object data extracted from packets received from the node that received the data reproduction process request (Fradette: col 5, lines 8-15 specify that the process is performed on read data)

The Fradette/Kaneko/Day system does not teach using an interleaving/deinterleaving process on the data or using the specific encoding/decoding technique of Forward Error Correction (FEC).

Noma, in a similar field of endeavor, teaches a data recovery processing unit (Noma: de-scrambler/de-FEC/de-interleave unit)

for executing a deinterleave process and an FEC decoding process; (Noma: [0044]) on received data (Noma: [0044] specifies a receiver side) in order to recover data (Noma: [0044] specifies checking data reliability).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Noma for interleaving/deinterleaving and FEC encoding/decoding on transmitted/received data. The teachings of Noma, when implemented in the Fradette/Kaneko/Day system, would allow for a more efficient data transfer system that could allow quicker data recovery. One of ordinary skill in the art would be motivated to utilize the teachings of Noma in the Fradette/Kaneko/Day system for quickly "correcting errors" and in order to "check the reliability of the data" (Noma: [0044]).

Regarding claim 20, this method claim comprises limitations substantially similar to that of claim 7 and the same rationale of rejection is used, where applicable.

37. Claims 5 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fradette (US 6,606,698 B2), in view of Kaneko et al (US 2003/0,101,272 A1) and Day (US 7,222,185 B1), and further in view of Desphande (US 7,191,246 B2).



Regarding claim 5, the Fradette/Kaneko/Day system teaches an information processing apparatus characterized in that:

the data transmission rate setting unit (Day: system controller) is configured to execute a process of determining the data transmission rate of each data transmission mode (Kaneko: [0005] specify a transfer rate corresponding with selected modes; Kaneko: [0012-0013] specify adjusting, which imply determining) in accordance with a demand level:  $x$  (Day: popularity), a band rate :  $y$  for each transmission mode (Kaneko: band in use);

The Fradette/Kaneko/Day system does not teach creating a function group in order to determine the transmission rate, where the summation of the group is set to equal another value.

Desphande, in a similar field of endeavor, teaches selecting a data transmission rate based on a cost function, which comprises sub-cost functions from each receiver that can be identified with a particular notation. (Desphande: col 5, lines 31 – 62 specify cost function and in the summation equations listed he denotes an indicator  $j$  for the sub functions)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Desphande for determining the transmission rate based on a function group. The teachings of Desphande, when implemented in the Fradette/Kaneko/Day system, would allow for a more efficient and accurate data transmission rate determination process. One of ordinary skill in the art would be motivated to utilize the teachings of Desphande

in the Fradette/Kaneko/Day system in order to “select transmission rates suitable for a plurality of clients” and to provide rate selection for various modes, such as “unicast and multicast delivery mechanisms” (Desphande: col 3, lines 13-18).

Regarding claim 18, this method claim comprises limitations substantially similar to that of claim 5 and the same rationale of rejection is used, where applicable.

38. Claims 9 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fradette (US 6,606,698 B2), in view of Kaneko et al (US 2003/0,101,272 A1) and Day (US 7,222,185 B1), and further in view of Fukunaga et al (US 6,282,240 B1).

Regarding claim 9, the Fradette/Kaneko/Day system teach an information processing apparatus characterized in that:

the packet generating unit is configured to generate a packet storing return data (Fradette: col 9, lines 52-62 specify constructing a packet with status information)

The Fradette/Kaneko/Day system does not teach creating a probability value capable of being adopted by a judgment process.

Fukunaga, in a similar field of endeavor, teaches a rule judgment condition setting unit (Fukunaga: reception capability estimate unit) configured to execute a process of setting a probability value (Fukunaga: col 5, lines 18-34 specify the

Art Unit: 2109

probability estimating unit) as a reproduction rule judgment condition statement (Fukunaga: reception capability estimate) capable of being adopted by the process of judging whether the node received the data reproduction process request executes the process satisfying the process request (Fukunaga: col 5, lines 35-48 specify the selection unit which determines if the target is capable of receiving the next frame)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Fukunaga for estimating a probability of a characteristic of the receiving node and utilizing that probability in a process. The teachings of Fukunaga, when implemented in the Fradette/Kaneko/Day system, would allow for a more selective target determination transmission mode. One of ordinary skill in the art would be motivated to utilize the teachings of Fukunaga in the Fradette/Kaneko/Day system in order to allow broadcasting and multicasting transmission schemes to selectively retransmit packets to targets and decrease the overall network load. (Fukunaga: col 2, lines 1-10).

Regarding claim 22, this method claim comprises limitations substantially similar to that of claim 9 and the same rationale of rejection is used, where applicable.

***Allowable Subject Matter***

39. Claims 10 and 23 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph as set forth in this Office action, as well as any objections set forth in this Office action, and to include all of the limitations of the base claim and any intervening claims.

***Conclusion***

40. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Hoffman et al (US 6,973,140 B2) discloses a system and method for adjusting FEC encoding/decoding rates.
- b. Guha (US 5,699,369) discloses a system and method for adaptively controlling FEC encoding rates with loss probabilities.
- c. Altschuler et al (US 6,195,622 B1) discloses a method and apparatus for creating attribute transition probabilities.
- d. Ito et al (US 6,085,019) discloses an apparatus and method for recording and reproducing data to and from a plurality of external devices.
- e. Namba et al (US 6,912,385 B2) discloses a system, device, and method for choosing a communication system based on requested data content.
- f. Uchihori et al (US 5,996,014) discloses a system that manages a storage area network (SAN) where each server manages a plurality of disk arrays.

Art Unit: 2109

- f. Uchihori et al (US 5,996,014) discloses a system that manages a storage area network (SAN) where each server manages a plurality of disk arrays.

Art Unit: 2109

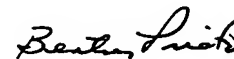
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey Nickerson whose telephone number is 571-270-3631. The examiner can normally be reached on M-Th, 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beatriz Prieto can be reached on 571-272-3902. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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